SANTA CRUZ BIOTECHNOLOGY, INC.

Neuregulin-1β/GGF2 (C-18): sc-1793

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The neuregulins are a family of ERbB/HER ligands encoded by four genes. Neuregulin-1 gene, NRG-1, encodes numerous splice variants with differing transcription initiation sites. Neuregulin-1 includes a range of isoforms with varying glycosylation, regulation of expression and function. Neuregulin-1 splice variants each bear an EGF-like domain, though, otherwise have unique domain structures, differing functions, and discrete tissue distribution. Six types of Neuregulin-1 isoform groups have been defined based on their structural features. Three types are most often described, type I (ARIA, NDF, or HRG), type II (GGF), and type III (SMDF). Neuregulin-1 has been linked to schizophrenia and has diverse neural functions. Neuregulin-1 affects cell migration, the differentiation of neural crest and Schwann cells and acts to upregulate the expression of acetylcholine receptors at muscle fibers during the formation of neuromuscular junctions.

REFERENCES

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2. Yarden, Y., et al. 1988. Growth factor receptor tyrosine kinases. Annu. Rev. Biochem. 57: 433-478.
3. Holmes, W.E., et al. 1992. Identification of heregulin, a specific activator of p185erbB4. Science 256: 1205-1210.
4. Marchionni, M.A., et al. 1993. Glial growth factors are alternatively spliced ErbB2 ligands expressed in the nervous system. Nature 362: 312-318.
5. Plowman, G.D., et al. 1993. Heregulin induces tyrosine phosphorylation of HER4/p180RErbB4. Nature 366: 473-475.
6. Carraway, K.L. III, et al. 1994. A Neu acquaintance for ErbB3 and ErbB4: a role for receptor heterodimerization in growth signaling. Cell 78: 5-8.
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CHROMOSOMAL LOCATION

Genetic locus: NRG1 (human) mapping to 8p12; Nrg1 (mouse) mapping to 8 A3.

SOURCE

Neuregulin-1β/GGF2 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Neuregulin-1 isoform SMDF of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1793 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Neuregulin-1β/GGF2 (C-18) is recommended for detection of Neuregulin-1 isoforms HRG-β1, HRG-β2, H100RG-β3 (GGF), GGF2 and SMDF of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Neuregulin-1β/GGF2 (C-18) is also recommended for detection of Neuregulin-1 isoforms HRG-β1, HRG-β2, H100RG-β3 (GGF), GGF2 and SMDF in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of NRG-1 Type I isoform: 115 kDa.

Molecular Weight of NRG-1 Type II isoform: 40 kDa.

Molecular Weight of NRG-1 Type III isoform: 83 kDa.

Positive Controls: THP-1 cell lysate: sc-2238, A-431 whole cell lysate: sc-2201 or MCF7 whole cell lysate: sc-2206.

SELECT PRODUCT CITATIONS

1. Gilbertson, R.J., et al. 1998. Expression of the ErbB-neuregulin signaling network during human cerebellar development: implications for the biology of medulloblastoma. Cancer Res. 58: 3932-3941.
2. Toyoda-Ohno, H., et al. 1999. Members of the ErbB receptor tyrosine kinases are involved in germ cell development in fetal mouse gonads. Dev. Biol. 215: 399-406.
3. Thompson, R., et al. 2000. Comparison of Neuregulin-1 expression in olfactory ensheathing cells, Schwann cells and astrocytes. J. Neurosci. Res. 61: 172-185.
4. Takabayashi, S., et al. 2001. Novel growth factor supporting survival of murine primordial germ cells: evidence from conditioned medium of ter fetal gonadal somatic cells. Mol. Reprod. Dev. 60: 384-396.
5. Reinhard, S., et al. 2009. Developmental regulation of Neuregulin-1 isoforms and ErbB receptor expression in intact rat dorsal root ganglia. Neurochem. Res. 34: 17-22.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.